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COPY #35

- At no time will the wand be pointed at any body part or other personnel, and
- Polycoated Tyvek®, 16" high steel toed rubber boots, safety glasses, hard hat with face shield, and inner and outer nitrile gloves will be worn at a minimum

## 5.5 TASK BY TASK HAZARD ANALYSIS

Table 5.5 presents a task by task hazard analysis for each location based on the hazards listed in the above sections. The hazard evaluation for each activity is based on the following criteria:

- Low - activities are likely to result in no exposure to chemical, radiological, or biological hazards. Physical hazards are minimal.
- Moderate - activities could possibly result in chemical, radiological, or biological exposures below established exposure limits. Physical hazards exist but are controlled through effective work practices.
- High - activities could possibly result in chemical, radiological, or biological exposures near or above established exposure limits. Physical hazards exist and exposure to the hazard is not controlled.

**Table 5.5**  
**Task by Task Hazard Analysis**

Tasks	Biological	Chemical	Physical	Radiological
Site Preparation	Low	Low	Moderate	Low
Stormwater Ditch and Topsoil at CSFS	Low	Low	Moderate	Moderate
Excavate Contaminated Soil	Low	High	Moderate	Moderate
Transport Contaminated Soils	Low	Moderate	Moderate	Moderate
Manage Contaminated Soil Feed Stockpile	Low	High	Moderate	Moderate
Trench Verification Sampling	Low	Moderate	Moderate	Moderate
Decontaminate Equipment	Low	Moderate	Moderate	Moderate
Transport and Backfill Treated Soil	Low	Low	Moderate	Low
Decontaminate Equipment	Low	Low	Moderate	Low
Site Reclamation	Low	Low	Moderate	Low

Field Change No.2

Field Change No.16

Table 6.1  
Safety Training Summary

Required Training	EZ/SCA and CRZ/RBA Personnel	Project Support Zone Personnel
General Employee Radiation Training (#019-278-01) <sup>2,3</sup>	X	X
Haz Com Work Area Indoctrination (#019-750-03) <sup>2,3</sup>	X	X
Lock Out/Tag Out Briefing (#019-866-02) --	X	X --
OSHA 40 - Hour (#018-691-03)	X	X
OSHA 8 - Hour (#018-691-05)	X	X
OSHA Supervisor (#018-691-01)	X <sup>1</sup>	X <sup>1</sup>
OSHA 3 - Day On Site Supervision (#018-691-07)	X	X
Pre-Evolution Briefing <sup>2,3</sup>	X	X
Radiation Worker II (#023-482-01)	X	
Respirator Indoctrination (#056-284-01)	X	
Respirator Fit Chamber Certification (#056-284-02)	X	
HSP-21 04 CBT (#047-115-00) or Briefing <sup>2,3</sup>	X	X
Supplied Air Respirator Indoctrination	X	
<sup>1</sup> For supervisors and foremen <sup>2</sup> For personnel involved in the culvert installation and site preparation <sup>3</sup> For personnel involved in transport and backfill of treated soil, decontamination of equipment used to handle treated soil, and site reclamation		

exposure to chemical, radiological or safety hazards

The Project Support Zone contains personnel who perform support functions and a provides break area Managers, support equipment, etc are generally located in the project support zone Personnel and equipment exiting the EZ/SCA must be decontaminated within the CRZ/RBA prior the entering the project support zone

On July 7, 1997, the SCA radiological posting of Mound Site soils was removed based on gamma spectroscopy analysis which indicated that no Tier 2 radiological levels were exceeded Therefore, once the soil has been treated to remove the volatile organic compounds, the soil will not require site controls as stipulated in either 10CFR835 or 29CFR1926.65 during the following tasks, transport and backfill of treated soil, decontamination of equipment used to transport and backfill treated soil, and site reclamation Site controls during these tasks will be limited to fences, barricades, and signs used to protect personnel from physical hazards

### 7.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The purpose of personal protective equipment (PPE), including clothing, is to shield or isolate individuals from the chemical, radiological, physical and biological hazards that they may encounter at sites containing hazardous or toxic materials The careful selection and use of PPE will protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing

No single combination of protective equipment and clothing is capable of protecting against all hazards, and PPE must be used in conjunction with other protective methods The use of PPE can in itself create significant worker hazards, such as heat stress, physical and psychological stress, and impaired vision, mobility, and communication

Specific protective garments are selected on the basis of a variety of criteria In general, the greater the hazard, the greater the level of PPE For any given situation, equipment and clothing must be selected to provide an adequate level of protection Over-protection as well as under-protection can be hazardous and should be avoided

Table 7 1 summarizes PPE requirements for specific tasks associated with operations at the Mound Site Non-routine, miscellaneous subtask PPE requirements are addressed in Table 7 2 The following sections detail the criteria for selecting specific PPE which will apply to this project NOTE The PPE shown in Tables 7 1 and 7 2 are subject to change at the discretion of the Site Safety Officer and the Radiological Engineer PPE worn will be that which is more restrictive for chemical or radiological hazards

Table 7.1  
Task Specific  
Personal Protective Equipment Summary

Task	Level	Body <sup>1</sup>	Foot	Head	Eyes <sup>2</sup>	Hands	Respirators
Site Preparation	D	Work clothes	Steel toed safety shoes	Hard hat	Safety glasses with side shields	Heavy duty leather gloves	None required FF,APR when mixing ConCover®
Installing Stormwater Ditch and Grading Topsoil at the CSFS	Modified D	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Inner surgeon and outer nitrile gloves or inner gloves and heavy duty leather work gloves (cotton liners optional)	None required
Excavation of Contaminated Soil and CSFS Hot Spot	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Transport of Contaminated Soil	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Management of CSFS	B <sup>3</sup>	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Excavation/CSFS Verification Sampling	B	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Decontamination of Equipment <sup>5</sup>	B <sup>3</sup>	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	None <sup>4</sup>	Inner surgeon and outer nitrile gloves (cotton liners optional)	Supplied air or SCBA
Transport and Backfill of Treated Soil	Modified D <sup>3</sup>	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Outer nitrile gloves (cotton liners optional)	None required
Decontamination of Equipment <sup>5</sup>	Modified D <sup>3</sup>	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Outer nitrile gloves (cotton liners optional)	None required
Site Reclamation	Modified D <sup>3</sup>	Anti-C Tyvek®	Steel toe safety shoes and shoe covers	Hard hat	Safety glasses with side shields	Outer nitrile gloves or inner gloves and heavy duty leather work gloves (cotton liners optional)	None required

<sup>1</sup> If splash hazards exists and cannot be mitigated, polycoated Tyvek® will be worn Anti-C Tyvek® required in radiological control areas only

<sup>2</sup> No eye protection will be required when a full facepiece respirator is worn.

<sup>3</sup> Work may be conducted without respiratory protection if continuous real time air monitoring indicates no volatile organic compounds at levels above background and the RWP does not require respirators for radiological purposes

<sup>4</sup> If no respiratory protection is required, safety glasses with side shields will be worn

<sup>5</sup> If high pressure water is used, 16" high, steel toed rubber boots will be worn If no respiratory protection is required and high pressure water is used, a hard hat mounted face shield will be worn in addition to the safety glasses

Field Change No.4

Field Change No.11

Field Change No.15 Field Change No.16

Table 7.3  
 Monitoring Program Summary

RADIATION			
Hazard	Action Level	Action(s) to be Taken	Monitoring Frequency
Equipment and material contamination	Alpha contamination. > 20 dpm/100cm <sup>2</sup> removable > 100 dpm/100cm <sup>2</sup> total Not to exceed > 300 dpm/100cm <sup>2</sup> total, 100 dpm/100cm <sup>2</sup> averaged over 1m <sup>2</sup>  Beta/gamma contamination > 1000 dpm/100cm <sup>2</sup> removable > 5000 dpm/100cm <sup>2</sup> total	Suspend operations, secure area and notify the Field Supervisor and Radiological Safety	Prior to removal from radiological control area As a Best Management Practice (BMP) during Transport and Backfill of Treated Soil, Decontamination of Equipment which comes in contact with treated soil, and Site Reclamation
Personnel contamination	> MDC of instrument	Suspend operations, secure area and notify the Field Supervisor and Radiological Safety	Prior to exiting radiological control areas
Long-lived radioactive airborne particulates	10% of the DAC <sup>1</sup> (if full-facepiece air-purifying respirators are not worn) 50 DAC (if full-facepiece, air-purifying respirators are worn)	Remove personnel from effected area, suspend operations, secure area and notify the Field Supervisor and Radiological Safety	Per the Radiological Work Permit As a Best Management Practice (BMP) during Transport and Backfill of Treated Soil, Decontamination of Equipment which comes in contact with treated soil, and Site Reclamation
Low Energy X-Ray and Gamma radiation (FIDLER)	> 5000 cpm	Suspend Operations Notify the Field Supervisor and Radiological Safety  Segregate soil	Each bucket or at the discretion of the Radiological Engineer per the Sampling and Analysis Plan
<sup>1</sup> DAC - Derived Air Concentration			

Field Change No.1  
 Field Change No.16

Field Change No.16

### 7.7.3 Perimeter Radiological Air Sample Results > 10% DAC

In order to protect collocated in the CRZ/RBA and project support zone, perimeter or work area high volume and low volume air samples will be obtained. A Science Applications International Corp., Model AP-2, portable alpha analyzer will be used to determine if an elevated sample result is due to naturally occurring radioactive material or radioactive contaminants of concern. If a confirmed sampling result is greater than 10% of the DAC, the following actions will be taken:

- All activities will be immediately suspended and the Project Manager or Field Supervisor will be notified,
- The Shift Supervisor will be notified and access to downwind areas will be restricted,
- Radiological Safety will be notified,
- All personnel in the CRZ/RBA and support zone will be moved to a safe upwind assembly area. No personnel will be allowed to leave the assembly area,
- Based on sample and monitoring results, potential personal radiological exposures will be reviewed,
- Based on the sample results, the area radiological postings, RWP, controls, and work practices will be reviewed and modified as necessary, and
- Upon approval from the RMRS Vice President or their designee, work activities will resume.

### 7.7.4 Equipment Radiological Contamination > Transuranic Release Limits

All material and equipment exiting the radiological control areas at the excavation and the CSFS will be surveyed per ROI-3 01. Should any survey results indicate contamination levels greater than those in the RFETS Radiological Control Manual, Table 2-2, the following actions will be taken:

- All activities will be immediately suspended and the Project Manager and Field Supervisor will be notified,
- Radiological Safety will be notified,
- The source of the contamination will be identified and controlled,
- The contaminated material or equipment will be contained, handled, and transferred in accordance with HSP-18 10, "Radioactive Material Transfer and Unrestricted Release of Property and Waste",
- Based on the survey results, the area radiological postings, RWP, controls, and work practices will be reviewed and modified as necessary, and
- Upon approval from the RMRS Vice President or their designee, work activities will resume.

**MOUND SITE SOURCE REMOVAL**  
**PUMPING OF CONDENSATE FROM TANKS T-101 AND T-102**  
**TO**  
**TANKER TRUCKS FOR TRANSPORT TO BUILDING 891 CWTF**  
**Activity Hazard Analysis**  
**7-16-97**

Note: This Activity Hazard Analysis is to be used in conjunction with the "Condensate Tanks T-101 and T-102 Operating Instructions" Job Aid.

Activity	Hazard	Preventative Measures
All site activities	General work hazards	All personnel will wear steel toed shoes, safety glasses with side shields, and hard hats
	Heat stress	Heat stress monitoring will be conducted in regards to work load and PPE worn
	Cold stress	Cold stress monitoring will be conducted Proper clothing will be available to all personnel and administrative controls will be adhered to
	Noise	Noise monitoring will be conducted Where necessary personnel will wear hearing protection In addition, all personnel will participate in the RFETS Hearing Conservation Program if necessary
Traversing the site	Slip, trips, falls	Care will be taken when traversing the site especially when wearing PPE and carrying equipment. All trip hazards will be immediately removed or marked when identified
Lifting equipment and materials	Back injury	Proper lifting techniques will be used and heavy equipment, where feasible, will be utilized to move heavy loads



Activity	Hazard	Preventative Measures
Handling equipment and materials	Pinch points and sharp edges	Care will be taken when pinch points and sharp edges exist and heavy duty leather work gloves will be worn
Using hand tools	Hand tools in unsafe operating condition	Hand tools will be inspected by the user prior to each use
	Improper use of hand tools	Hand tools will be utilized for their intended use and operated in accordance with HSP-12 10 Guards will be in place and no modifications will be made
	Electrical shock	Portable power tools will be plugged into a GFCI protected outlet and will be UL listed and double insulated Cords will be inspected and protected from unnecessary damage Any tool whose cord shows signs of damage or deterioration will be immediately removed from service
Use of compressor	Electrical shock	Permanently installed power cables will be intended for outdoor use, inspected by the user, and protected from unnecessary damage Any power cables which show signs of damage will require immediate repair or replacement
	Fire	At a minimum, a 10 lb ABC fire extinguisher will be located next to the compressor
Locating the tanker truck and transferring condensate	Unauthorized, untrained, or unprotected personnel entering the work area	A Health and Safety Specialist will notify all project personnel of the tanker condensate transfer operation and will restrict access to the area
Locating tanker truck to be filled	Ground personnel or equipment being struck with tanker truck	Tanker truck operations will be conducted in a deliberate safe manner A spotter will be required when backing the tanker truck

Activity	Hazard	Preventative Measures
Opening the tanker truck hatch to prevent tanker pressurization and to verify that the tanker truck has sufficient capacity to receive liquid	Inhalation of volatile organic compounds	Real time VOC monitoring will be conducted in the breathing zone with a FID/PID Levels > background will require the use of Level B respiratory protection
	Falls from the tanker hatch platform	Personnel will wear a full body harness with a lanyard In addition, personnel will have current Fall Protection qualification
Use of Level B respiratory protection, if required	Physical fatigue	Medical approval will be required for personnel
	Improper face to facepiece seal	Respirator specific fit test approval will be required for personnel
	Improper inspection or use of respirator	Personnel will be trained in the inspection procedures, use, and limitations of the specific respirator worn
Transferring condensate	Improper operation of transfer system resulting in spills, equipment damage, or injury	Personnel involved with the transfer operation will read and understand the "Condensate Tanks T-101 and T-102 Operating Instructions" Job Aid (Attached) RMRS Field Supervision will verify that the system is properly configured
	Pump malfunction, hose rupture, or cam lock failure resulting in spills, equipment damage, or injury	Pumps, cam locks, and hoses will be inspected prior to use The hoses will be protected from unnecessary damage Spill containment pans and/or buckets will be placed under discharge line connections at the pump and tanker truck
Connecting diaphragm pump discharge line to tanker truck	Skin contact with volatile organic compounds	Personnel will wear inner and outer nitrile gloves
	Inhalation of volatile organic compounds	Real time VOC monitoring will be conducted in the breathing zone with a FID/PID Levels > background will require the use of Level B respiratory protection

Activity	Hazard	Preventative Measures
Disconnecting diaphragm pump discharge line from tanker truck	Spills of residual liquid in the discharge line	The cam lock will be slowly opened to allow residual liquid to drain into a bucket. The discharge line will be capped and placed in a spill containment pan
	Skin contact with volatile organic compounds	Personnel will wear inner and outer nitrile gloves
	Inhalation of volatile organic compounds	Real time VOC monitoring will be conducted in the breathing zone with a FID/PID. Levels > background will require the use of Level B respiratory protection
Pouring residual liquid generated from disconnecting the diaphragm pump discharge line into the tanker truck	Falls from the tanker hatch platform	Personnel will wear a full body harness with a lanyard and will have current Fall Protection qualification
	Skin contact with volatile organic compounds	Personnel will wear inner and outer nitrile gloves
	Inhalation of volatile organic compounds	Real time VOC monitoring will be conducted in the breathing zone with a FID/PID. Levels > background will require the use of level B respiratory protection

Approved:

Signature

Date

RMRS Project Manager-Wayne Sproles

*Wayne Sproles* 7-21-97

RMRS H&S Supervisor-Peggy Schreckengast

*Peggy Schreckengast* 7-21-97

RMRS Radiological Coordinator-Jerry Anderson

*Jerry Anderson* 7/21/97

SSOC Radiological Engineer-Scott Newsom

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## JOB AID

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### CONDENSATE TANKS T-101 AND T-102 OPERATING INSTRUCTIONS

JA-MND-001

APPROVED

Date Effective 06/2/97

Page 1 of 5

Marcella C Broussard, Manager ER Projects, Environmental Restoration

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#### 1.0 GENERAL

- Tanks T-101 and T-102 located at the treatment site are intended for the temporary storage of condensate generated by thermal desorption operations. Tanks T-101 and T-102 are equipped with tank level and leak detection instrumentation to aid in the safe use of the tanks. Condensate transfer activities will be performed in accordance with the approved Activity Hazard Analysis contained in the site-specific Health and Safety Plan.
- The level indication panel (located immediately to the east of the tanks) provides the level of liquid in each tank in units of feet. The "Volume vs Liquid Level conversion Table" (ref Table 1) is mounted on the east and west ends of Tanks T-101 and T-102 for field reference.
- The level indication panel also includes a red high level alarm light for each tank. A tank high level alarm indicates that the tank is "operationally" full and that no additional liquid is to be sent to the tank. The high level alarms are set at 6.5 feet of liquid for both tanks (the tanks are 8 feet in diameter).
- Tanks T-101 and T-102 are double-walled tanks. The leak detection panel (located next to the level indication panel) automatically monitors the secondary containment spaces for leaks in the primary wall of each tank.
- All condensate transfer operations will be performed in accordance with the site specific Health and Safety Plan. Report any spills or leaks to the RMRS field supervisor.
- All tank measurements addressed in this job aid will be recorded (ref Attachments 1 and 2), all documentation will be maintained at the jobsite.

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CLASSIFICATION OFFICE

## 2.0 TANK FILLING

### 2.1 Initial Filling

- The first time tanks T-101 and T-102 are filled, the liquid level will be monitored manually with a "calibrated stick" or water level probe. These manual readings will be taken by inserting the liquid level probe into the tank vent opening on top of the tank (i.e., the second flange from the east end of each tank). Level indicator readings will be documented on Attachment 1 along with the manual readings. At least five such data points will be obtained. These data will be used to check the level indicator readings and for instrument calibration, if necessary, during the first filling of each tank with process liquid.
- **Under no circumstances** shall either tank be filled above 6.5 feet, the "operational maximum" for each tank.

### 2.2 Normal Operation

- "Normal Operation" of Tanks T-101 and T-102 is conducted after final calibration of the tank level instrumentation is completed as described above in Section 2.1.
- Prior to pumping liquid to Tanks T-101 or T-102 from the condensate settling tank, field personnel are to record on Attachment 2 the liquid levels in the tanks by reading the panel level indicators. In addition, the status of the tank high level alarm lights and the leak detection alarm will be recorded in the field supervisor's log book. Tank filling may be initiated if at least one of the tanks does not have a high level alarm indication and there appears to be sufficient liquid storage capacity for the transfer in question. If both tanks are available to receive liquid, Tank T-101 is to be selected. Record level, volumes, and start/stop times at the end of each transfer.
- The tank level and transfer line connections and flanges must be monitored at all times when a tank is being filled. If the tank level alarm light turns "ON" while the tank is being filled, flow to that tank will be stopped immediately. Liquid may be routed to the alternate tank if it is able to receive liquids as determined by its tank level and the status of the high level alarm indicator.
- When the level of liquid in a tank has reached 4 feet or approximately 5,000 gallons (see "Volume vs Liquid Level Conversion Table"), notify the RMRS field supervisor to make arrangements for a tanker truck to be dispatched to the site.
- Inspect the leak detection panel at least one time per 12-hour shift and document in the field log book. Channels 1 and 4 give the leak detection status of Tanks T-101 and T-102, respectively. Ignore the indicator lights for Channels 2 and 3. The panel indicator lights are interpreted as follows:

Indicator Light	Status	Interpretation
1 Leak Alarm Indicator (Red)	OFF	The tank is not leaking
	ON	A leak has been detected Notify the RMRS field supervisor immediately
2 Continuity Indicator (Yellow)	ON	The leak detection sensor is working properly
	OFF	A fault in the leak detection circuit has been detected Notify the RMRS field supervisor immediately
3 Power (status) Indicator (Green)	ON	Power to the leak detection system is on
	OFF	Power to the leak detection system is off

### 2.3 Tank Off-loading

- Prior to pumping liquid from Tanks T-101 or T-102 to the tanker truck, the operator will verify which tank is to be pumped by noting the tank liquid levels on the level indication panel. For the tank to be pumped, the operator will document the beginning tank liquid level and volume (see the attached "Volume vs Liquid Level Conversion Table" Attachment 2)
  - To transfer liquid from a tank to the tanker truck follow the steps listed below and complete Attachment 2
- 1 Verify that the tanker truck is sufficiently empty to receive liquid by visually checking the tanker truck from the top hatch. Leave the hatch open during transfer to prevent pressuring the tanker truck.
  - 2 Connect the diaphragm pump discharge line to the tanker truck (3" camlock fitting). Place a bucket for spill containment under the discharge line/truck camlock connection. Be sure that the discharge line valve (located next to the camlock fitting) is not accidentally "bumped" open while making the connection.
  - 3 After the pump discharge line/tanker truck connection is made, open the tanker truck inlet valve on the bottom of the tanker truck.

- 4 Open the tanker truck inlet valve at the rear end of the tanker truck, by the camlock connection
  - 5 Place the pump discharge line valve in the "OPEN" position
  - 6 Place the pump suction line valve associated with the tank to be pumped in the "OPEN" position
  - 7 Move the air compressor motor starter disconnect to the "ON" position The motor starter is located to the right of the leak detection panel Start the air compressor by turning the Hand/Off/Auto switch to "AUTO" and depressing the "GREEN" start button
- Allow the compressor to run until the compressor gauge reads approximately 100 psi
  - Slowly turn the ball valve at the compressed air tank outlet to approximately one-half open Liquid will begin flowing into the tanker truck at a rate of approximately 50 gpm Stop pumping when approximately 2,500 gallons of liquid have been transferred to the tanker truck
  - To stop transferring liquid from a tank to the tanker truck follow the steps listed below
- 1 Place the compressed air tank outlet valve in the "CLOSED" position
  - 2 Turn off the air compressor by turning the Hand/Off/Auto switch to the "OFF" position Move the air compressor motor starter disconnect to the "OFF" position Record stop time, liquid level, tank volume, and volume transferred on Attachment 2
  - 3 Place the pump suction line valve in the "CLOSED" position
  - 4 Place the pump discharge line valve in the "CLOSED" position (Note air diaphragm pumps may be "dead-headed" without causing damage to the pump )
  - 5 Place the tanker truck inlet valve in the "CLOSED" position
  - 6 Place the tanker truck bottom valve in the "CLOSED" position
  - 7 Slowly disconnect the discharge line from the tanker truck being careful to contain any residual liquid resulting from breaking the connection in the bucket Transfer any liquid that may have spilled into the bucket into the top of the tanker truck, and close and secure the top hatch on the tanker truck Place the discharge hose and bucket back into the pump spill containment pan

**TABLE 1**  
**Tanks T-101 and T-102**  
**Tank Volume vs. Liquid Height**

	Depth of Liquid (feet)	Volume of Liquid (gallons)	
	0 0	0	
	0 5	264	
	1 0	733	
	1 5	1,318	
	2 0	1,985	
	2 5	2,711	
	3 0	3,477	
	3 5	4,271	
	4 0	5,076	
	4 5	5,882	
	5 0	6,675	
	5 5	7,442	
	6 0	8,168	
High Level Alarm			Maximum Fill Volume
	7 0	9,420	
	7 5	9,888	
	8 0	10,153	



**ATTACHMENT 1**  
**VOLUME VS. LIQUID LEVEL CONVERSION TABLE**

Tank T-101			Tank T-102		
"Stick" Reading (feet)	Panel Level Indicator Reading (feet)	Date	"Stick" Reading (feet)	Panel Level Indicator Reading (feet)	Date
1			1		
2			2		
3			3		
4			4		
5			5		



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**MOUND SITE SOURCE REMOVAL**

**SAMPLING OF CONDENSATE FROM TANKS T-101 AND T-102**

**Activity Hazard Analysis**

7-30-97

Field Change No.17

Activity	Hazard	Preventative Measures
All site activities	General work hazards	All personnel will wear steel toed shoes, safety glasses with side shields, and hard hats
	Heat stress	Heat stress monitoring will be conducted in regards to work load and PPE worn
	Cold stress	Cold stress monitoring will be conducted Proper clothing will be available to all personnel and administrative controls will be adhered to
	Noise	Noise monitoring will be conducted Where necessary personnel will wear hearing protection In addition, all personnel will participate in the RFETS Hearing Conservation Program if necessary
Traversing the site	Slip, trips, falls	Care will be taken when traversing the site especially when wearing PPE and carrying equipment All trip hazards will be immediately removed or marked when identified
Lifting equipment and materials	Back injury	Proper lifting techniques will be used and heavy equipment, where feasible, will be utilized to move heavy loads
Handling equipment and materials	Pinch points and sharp edges	Care will be taken when pinch points and sharp edges exist and heavy duty leather work gloves will be worn

Activity	Hazard	Preventive Measures
Using hand tools	Hand tools in unsafe operating condition	Hand tools will be inspected by the user prior to each use
	Improper use of hand tools	Hand tools will be utilized for their intended use and operated in accordance with HSP-12 10 Guards will be in place and no modifications will be made
	Electrical shock	Portable power tools will be plugged into a GFCI protected outlet and will be UL listed and double insulated Cords will be inspected and protected from unnecessary damage Any tool whose cord shows signs of damage or deterioration will be immediately removed from service
Sampling of condensate tanks T-101 and T-102	Unauthorized, untrained, or unprotected personnel entering the work area	A Health and Safety Specialist will notify all project personnel of the sampling operation and will restrict access to the area
Accessing the top of condensate tanks T-101 and T-102	Improper use of ladder resulting in falls	The ladder will be correctly positioned and used Personnel will have current Ladder Safety Awareness training
	Falls from the top of the tanks	Personnel will wear a full body harness with a lanyard In addition, personnel will have current Fall Protection qualification
Actual sampling of condensate tanks T-101 and T-102 using a bailer	Skin contact with volatile organic compounds or sample preservatives	Personnel will wear inner and outer nitrile gloves Polycoated Tyvek® will be worn if a splash hazard exists.
	Inhalation of volatile organic compounds	Real time VOC monitoring will be conducted in the breathing zone with a FID/PID Levels > background will require the use of Level B respiratory protection
	Spills of condensate during transfer from bailer to sample container	Transfer of condensate will be done within a secondary containment

Activity	Hazard	Preventative Measures
Use of Level B respiratory protection, if required	Physical fatigue	Medical approval will be required for personnel
	Improper face to facepiece seal	Respirator specific fit test approval will be required for personnel
	Improper inspection or use of respirator	Personnel will be trained in the inspection procedures, use, and limitations of the specific respirator worn.

Approved.

Signature

Date

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Wayne Sproles / 7-30-97

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